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(71) Applicant: TOSHIBA CORP
(72) Inventor: WATANABE FUMIO

(54) WIRE BREAKAGE DETECTING DEVICE IN MANIPULATOR JOINT

(57) Abstract:

PURPOSE: To surely check the presence of breakage of a signal wire in accordance with a fed-back signal and to surely specify a broken signal wire by successively supplying a wire breakage detecting current to signal wires for a plurality of units, and by successively feeding back the wire breakage detection current from specific signal wires.

CONSTITUTION: In a manipulator system used for assembling a space station or the like, a wire breakage detecting part 21 composed of a CPU and the like is provided in a control unit 11. In the case of occurrence of erroneous operation of the control unit 11, the operation of a joint mechanism unit 12 comes to a stop so as to set a wire breakage detection mode. Accordingly, a wire breakage detection current is successively applied to signal wires 10_1 to 10_n through the intermediary of buffers 22_1 to 22_n and diodes $D1_1$ to $D1_n$, and is

then led to a wire breakage detection wire 23 through diodes $D2_1$ to $D2_n$, resistances $R1_1$ to $R1_n$ and diodes $D3_1$ to $D3_n$. Further, it is inputted to first and second comparators 24, 25 in order to compare the same with a set value. In accordance with a result of the comparison, the present of wire breakage among the signal wires 10_1 to 10_n is determined.

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